ABSTRACT OF THE DISCLOSURE

A bootstrapping tandem navigation receiver system includes two independent navigation receivers. A first uses coherent detection and makes carrier-phase pseudorange measurements. A second uses non-coherent detection and a longer predetection interval and thus can acquire satellites in very weak signal environments. The second navigation receiver delivers a bootstrapping message to the first receiver that allows it to directly acquire the satellites without searching for them. The first navigation receiver then drives to find carrier phase lock and produces its more accurate measurements.